

WHAT IS CLAIMED IS:

1. An electrode for an electrochemical cell comprising:
a plurality of fibers comprising an electrically conductive material configured to conduct electrons to an electrolyte of the electrochemical cell.
2. The electrode as in claim 1, wherein the electrically conductive material is selected from the group consisting of zinc, aluminum, magnesium, cadmium, lithium, ferrous metals, and combinations and alloys comprising at least one of the foregoing materials.
3. The electrode as in claim 1, wherein the electrically conductive material comprises zinc alloyed with a metal selected from the group consisting of bismuth, aluminum, indium, lead, mercury, gallium, and combinations and alloys comprising at least one of the foregoing materials.
4. The electrode as in claim 1, wherein the fibers have an effective diameter of about 1 nanometer to about 5 millimeters.
5. The electrode as in claim 1, wherein the fibers have an effective diameter of about 1 nanometer to about 1 millimeter.
6. The electrode as in claim 1, wherein the fibers have an effective diameter of about 0.05 millimeters to about 0.25 millimeters.

7. The electrode as in claim 1, wherein the fibers have an effective diameter of about 0.10 millimeters to about 0.15 millimeters.
8. The electrode as in claim 1, wherein the fibers have a cross-sectional shape selected from the group consisting of rectangular, square, triangular, other polygonal, circular, elliptical, and combinations comprising at least one of the foregoing shapes.
9. The electrode as in claim 1, wherein the fibers have a length of about 0.5 millimeters to about 1000 meters.
10. The electrode as in claim 1, wherein the fibers have a length of about 2 millimeter to about 10 meters.
11. The electrode as in claim 1, wherein the fibers have a length of about 2 millimeters to about 10 millimeters.
12. The electrode as in claim 1, wherein the fibers have a length of about 5 millimeters to about 7.5 millimeters.
13. An electrochemical cell comprising a first electrode, a second electrode, and an electrolyte in ionic contact between the first electrode and the second electrode, wherein the first electrode comprises the electrode as in claim 1.

14. The electrochemical cell as in claim 8, wherein the electrochemical cell is configured as a battery cell, a fuel cell, or a fuel cell battery.

15. The electrode as in claim 1, wherein at least a portion of said fibers comprise a synthetic fiber, a cellulose fiber, or a graphite fiber coated with the electrically conductive material.

16. The electrode as in claim 1 formed by methods selected from the group consisting of metallurgical extrusion methods, mechanical drawing, electrochemical deposition method, and mechanical methods.

17. The electrode as in claim 1, the fibers formed by cutting a block formed of the electrically conductive material.

18. The electrode as in claim 1, formed by melting the electrically conductive material; processing the melted material through a die to form fibers, and conveying the fibers through laminator to form a fiber mat.

19. The electrode as in claim 18, further wherein the fiber mat is laminated with a substrate.

20. The electrode as in claim 1, further comprising a plurality of granules of another electrically conductive material dispersed within the fibers, wherein the granule electrically

conductive material may be the same or different from the fiber electrically conductive material.

21. The electrode as in claim 20, wherein the granule electrically conductive material and the fiber electrically conductive material comprise zinc or a zinc alloy.

22. A zinc-air electrochemical cell comprising a first electrode, a second electrode, and an electrolyte in ionic contact between the first electrode and the second electrode, wherein the first electrode comprises the electrode as in claim 1 and further wherein the electrically conductive material comprise zinc or a zinc alloy.